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ABSTRACT

This bulletin briefly describes research activities in the field of curriculum development for comprehensive and upper secondary schools in Finland. The comprehensive schools, established by law in 1963, offer a uniform curriculum to all Finnish students for the first nine years of school. After attending the comprehensive school, students may attend either an upper secondary school leading to university education, or enter a vocational education program. Research has been concerned with the implementation of the new comprehensive schools, and with instructional improvement in comprehensive and secondary schools. The amount of national funding for research contracts from 1965 through 1976 is also discussed. (Author/MV)

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# EXPERIMENTAL AND RESEARCH ACTIVITIES IN FINLAND

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FOREWORD

Experiments and research constitute an integral part of curriculum development work. School experiment activities are mainly directed by the Research and Development Bureau of the National Board of Education. Experiments are carried out on the pre-school, comprehensive - and upper secondary school levels. Research financed by the National Board of Education as well as experimental activities coordinated by it is directed to certain priority areas of curriculum development.

This Information Bulletin includes articles on experiments and research activities in the field of curriculum development of comprehensive and upper secondary schools by the Head of the Research and Development Bureau, Veikko Lepistö, chief inspectors Reijo Laukkanen, Yrjö Männistö and Marja Ihto.

CONTENTS

Experimental and research activities in Finland
Veikko Lepistö 1

Experiments on comprehensive school education
Reijo Laukkanen 5

On the implementation of the upper secondary school experiment
Marja Ihto 11

Experimental activities of the National Board of Education
Yrjö Männistö 15

EXPERIMENTAL AND RESEARCH ACTIVITIES IN FINLAND

Veikko Lepistö

Definitely more systematic national school experimental - and research avtivity was initiated in Finland in the 1960's. It's motive was the development of the comprehensive school system. In 1963 the parliament made a decision according to which the Finnish school will be developed on the basis of the comprehensive school system. In the then prevailing school system elementary education was traditionally divided into two school forms: elementary and secondary schools. After starting school at the age of 7 pupils had a choice of two school forms after the fourth school year. They and the parents had to decide whether pupils move to secondary schools leading to tertiary level studies or whether they stay in elementary school for another two years and afterwards enter civic school. After civic school they could enter vocational schools or employment.

The parliament decision meant that all children were to study according to a basically uniform program in a nine - year comprehensive school. After the comprehensive school they should have a chance to transfer to an upper secondary leading to university or to vocational education.

After the parliament decision active experimentation started in Finland: School experimentation was in the beginning aimed at the development of structure models for the upper level of the comprehensive school and at the administrative as well as organisatory structures of the three last years of the comprehensive school. The basic problem proved to be the question of how the 5-year secondary school could be linked with the civic school system, which was a sequel of the elementary school. During the first experimentation years reports were made on whether there were grounds for building the instruction of the upper level on the basis of new, fairly separate lines of study. In 1967 we were, however, ready for a solution, which meant both adiministratively,

structurally and contextually the beginning of upper level experimentation. After overcoming structural confusion, the experimentation was able to focus on contextual and methodological questions in teaching. Main emphasis has laid on these experiment objects until recently.

School experiments financed by central administrative bodies started in the beginning of 1965. The part of research was very modest in the beginning. On the basis of available resources attempts were made to, among others, find out which results of Scandinavian development in education could best be utilized. The yearly budgets on research increased steadily, but with respect to international comparisons Finland represents a fairly modest standard. The effects of Finland's present economical problems reflect on school research in the relative decrease of financing since 1975.

School research was for a long time carried out separately to support planning. During the last few years research activities have increasingly been linked with other development of curricula. This has been facilitated by planning development activity in the form of projects, which have been directed by specially set up work groups. In national experiment - and research activities guidance and supervision are in the hands of the central adiministrative body, which means that the before-mentioned projects function under the direct surveillance of the National Board of Education.

As will be seen later school research is, however, carried out quite independently in the various departments of our universities or in the Institute for Educational Research, which especially concentrates on school research. In the same way as the National Board of Education has in research activities considered it important to have the initiative of communities and schools at the disposal of development work, so has it been considered necessary in research activities to use the ideas of research institutes to support national development work. The National Board of Education has notified both experimental municipalities - and schools as well as university research institutes which areas of development it wishes experiment - and research proposals focused on.

A new phase in the development of our school system and in the pedagogic experiment and research activity is beginning. In 1974 our government made a decision to reform the secondary (upper secondary and vocational education) education system. The main emphasis of the structural development of education has shifted to secondary level. The reform deals with making our fairly inconsistent secondary education structurally uniform, which means naturally reform in the teaching contents as well. One of the purposes of the structural and contextual changes is to open channels to tertiary level studies from the traditional vocational school courses.

Planning in the secondary education field is at the moment very active as the fourteen curriculum committees set up in 1974 have in the first half of 1977 presented their proposals for the contents of teaching to the Ministry of Education. The applications of the said proposals are also taking place eventually. A short while ago the parliament held a two day-discussion on the reform of secondary education, and it seems evident that in 1977 the goverment leaves a law on the reform of secondary education to the parliament for consideration.

In the field of liberal education the reform of secondary education means changes in the functions of upper secondary schools. Thus the expansion of upper secondary education will be restricted and modified in time to form a certain quota in the entire secondary education system. At the moment approx. 43 per cent of the student age cohort studies in the upper secondary. Presently plans are made to develop further the proposals of the upper secondary curriculum committee among others with the help of experimental activities. One of the most essential changes in the proposals of the upper secondary curriculum committee is the acquirement of course-based instruction. It seems possible that this solution presents as well a model for secondary level vocational education. Course-based instruction has been tried out in national school experi-

ments for several years. The positive experiences received from the experiments have partly had their effect on the fact that the upper secondary curriculum committee has ventured to propose course-based instruction as the main element of upper secondary curriculum construction.

Secondary level school reform does not, however, present reforms only in secondary school instruction. The principles of reform stand for bigger demands for the comprehensive achool as well. It is presumed that comprehensive school pupils are borh formally and factually capable of starting their school career in the upper secondary as well as other secondary schools. Whereas there are distinct differences in the achievement of comprehensive school pupils at the moment, attempts will be made to rise the achievement level in the comprehensive school especially as regards low achievers e.g. by developing teaching methods. Furthermore it seems necessary to make corrections in the system of sets in the upper level comprehensive school curriculum or sets should be completely abandoned. In subjects where we have sets (mathematics and two foreign languages) the differences in school achievement have proved great.

These inevitable clarifications in the present functioning of the comprehensive school present many other demands besides the development of teaching methods. While we simultaneuously prepare way for linking six year-old's education to basic education, the internal development of basic education (which is the basis for our entire secondary education) stands for an essential field of research and curricula. Furthermore the very last municipalities in Finland go comprehensive this year, which makes it possible to study the development of the comprehensive school from a far vider perspective.

In the following articles the officers of the Research and Development Bureau of the National Board of Education deal with experiments and research into the comprehensive as well as upper secondary schools.

# EXPERIMENTS ON COMPREHENSIVE SCHOOL EDUCATION

Reijo Laukkanen

## 1. Reform of the school system

Transition into the comprehensive school system started in Finland in 1972, and it follows a given time-table so that last communities to go over into the new school system will have done so administratively in 1977. The last communities to introduce the comprehensive system are Helsinki and some other large communities around the capital.

Pedagogical transition takes place in each community so that starting from the transition year the first five grades in the lower stage will follow the comprehensive school curriculum of the old parallel school system. Thus pedagogical transition in each community takes five years, which means that after this period the whole age-group has for the first time gone through the comprehensive school. This means that the first age-group of the first communities to have introduced the comprehensive school complete their comprehensive school studies in spring 1977.

## 2. What does school experiment mean?

Experimental activity is hardly anything new to any teacher. Teachers vary their teaching methods and use different kinds of audiovisual materials etc., use different methods of motivating pupils, different methods of individualization, various teaching materials etc. What is common to all such experiments and try - outs is the aspiration to rationalize teaching and improve learning.

This kind of activity aiming at finding new methods is natural and desirable and does not need any special permission or arrangements. The situation is different when in searching for new forms of activities it is necessary to diverge from

rules and regulations concerning subjects, curriculum class size or composition, length of lessons, pupils' weekly number of lessons, marking and grading etc. Such school experiments need special permission either from the Ministry of Education or from the cabinet depending on whether the experiment is concerned with the comprehensive school or the upper secondary school. One of the conditions for obtaining a permission to conduct a school experiment is that it can be assumed to give useful results with a view to developing the national school system.

The on-going experiments can be classified into two groups: experiments based on experimental design and exploratory experiments which look for new alternatives. The experiments are usually carried out with relatively small samples of pupils and with relatively few teachers involved. This means that in some cases large-scale feasibility studies are arranged in order to test the reliability and generalizability of the results.

3. Experimental procedure

The Finnis school system is basically a municipal school system. For this reason the initiative to conduct an esperiment usually comes from the local communities. Communities can organize school experiments on the permission of the Ministry of Education. A statute lays down the principles of school experiments. The condition for obtaining a permission to carry out school experiments is that the National Board of Education has approved the plan.

The permission given by the Ministry of Education also specifies the compensation to teachers for extra work. After this the National Board of Education requires from the community a detailed account of how the experiment will be carried out in practise. The community must send all material to be used in the experiment to the National Board of Education for inspection and approval, before the experiment can start. When the experiment has been completed the community submits a report to the National Board of Education, which must include information on specified aspects.

4. Direction of school experiments

In order to quarantee that annual experimental activities serve the development of the comprehensive school, the National Board of Education each year gives instructions about applications for experiments. These instructions indicate among other items which areas of development are prioritized.

One of the priority areas has been the development of the teaching of grades 1 - 2 (7 - 8 year-olds) and 6-year olds (pre - school). The project on the teaching of early grades involves experimental pre - school classes in six communities. The purpose is to examine different possibilities of organizing pre - school education. The project also deals with the problems of curricular linkage between early grades and subsequent teaching.

The teaching of combined grades (multiple grades) has emerged as an important area of development. The Finnish school system is characterized by a large proportion of small schools in which teaching is given in multiple grades. This means that the same teacher must simultaneously teach pupils from several different grades. About 30 per cent of pupils on the lower level of the comprehensive school (grades 1-6) study in multiple grades. Respectively nearly half of lower level teachers teach in multiple grades. There are multiple grades especially in the 1 - 3 teacher schools in sparsely - populated areas. In grades 1 - 6 teachers usually are so-called classroom teachers, not specialist subject teachers.

In multiple grades the teaching of "modern subjects" (geography, biology, religion, civic education and environmental studies) is given so that e.g. in a multiple grade consisting of grades 3 and 4 the third year syllabus is covered during the first year and the fourth year syllabus in the following year. This causes a number of problems. Experiments are under way to develop such curricular

alternatives which would make it possible to provide insturction in the same way as in a normal, non-combined class. This is believed to lessen the amount of so-called silent study. If this alternative proves feasible it would also make it possible to prepare teaching materials equally suitable to combined and normal grades. Six communities carry out experiments on teaching of multiple grades.

Mastery learning experiment is the largest experiment at present. It attempts to find such methods of individualizing instruction as would make it possible for the substantial majority of pupils to obtain the minimum basic level in certain so-called instrumental subjects (mathematics, mother-tongue, 1st foreign language). The National Board of Education has prepared draft proposals for common core syllabuses in such instrumental subjects. The basic objectives aimed at in the mastery learning experiment are in line with the draft proposals. The experiment has, however, further specified the objectives and the progression of teaching contents. An important part of the experiment is the development of methods of evaluation.

The projects on the dirrerentiation of teaching and on the development of evaluation are also closely associated with the work on basic objectives and common core syllabuses. The former is concerned with the development of the teaching of instrumental subjects in the upper level of the comprehensive school (grades 7 - 9). On the upper level of the comprehensive school the teaching of some instrumental subjects is done within a system of 2 - 3 sets consisting of different amounts of content to be cevered and different levels of attainment aspired. Along with the reform of secondary level education (upper secondary and vocational schools) it is designed to upgrade the level of comprehensive education. The present system of sets appears to be a selective device per se. At the end of 1975 a committee submitted a report on the development of differentiation and individualization of teaching in the comprehensive school. It proposed that the system of sets should be abandoned. So far no decision on this point has been taken.

The evaluation project aims to develop different methods of assessing learning outcomes. Evaluation is also an integral part of the mastery learning experiment and the differentiation experiment. The evaluation project contains e.g. work on the development of verbal progress reports, development of follow-up concerning the degree to which the comprehensive school curriculum has been realized, preparations for the reform of marking and student evaluation, and preparation and administration of centrally administered tests. At present there are two projects on the development of evaluation

The problems of the education of pupils (social, moral, ethical) have also received attention in the organization of developmental activities. In this project different methods and activities are tried out, which deal with special education, school discipline as well as cooperation between home and school.

The National Board of Education has a special project concerned with the educational problems of our Swedish -speaking population. The experiments deal with the same problems as have been dealt with in the above. In part, however, the special position of the Swedish -speaking minority gives rise to particular problems needing new and different types of organizing developmental work.

5. Extent of experimental activities

Adequate regional coverage has been attempted in the placement of experiments. In the school year 1976-77 experiments are carried out in all eleven provinces. About 200 teachers participate anually in comprehensive school experiments. The amount of experiments in school years 1975-76 and in 1976-77 and their distribution by community is given in the table in the next page.

TABLE. The amount of comprehensive school experiments and communities participating in school years 1975-76 and 1976-77

| Experiments | School year 1975-76 | | School year 1976-77 | |
|---|---|---|---|---|
| | number of experiments | number of communit. | number of experiments | number of communit. |
| Pre-school experiment | 6 | 6 | 6 | 6 |
| Comprehensive school experiment | 28 | 19 | 32 | 28 |
| Total | 34 | 25 | 38 | 34 |

ON THE IMPLEMENTATION OF THE UPPER SECONDARY SCHCOL EXPERIMENT

Marja Ihto

## 1. Background

Most upper secondary school experiments up till recent years have been started upon the initiatives of the schools themselves. Thus the experiments have been minor subject - based experiments.

To a greater extent the initiative of upper secondary experiments has, however, risen from the National Board of Education. Even when the school in the municipality has at its own initiative proposed an experiment, the National Board of Education has made an attempt to aim the experiment setting so that the result would benefit not only local interests but national ones as well. Furthermore the experiments have been located geographically more evenly than before. Such has been the case especially after the statement of principles made on the 30th of May 1974 by the Cabinet on the reform of secondary education (cf. Information Bulletin 4/1974).

The statement of principles does not from the point of view of upper secondaries mean an essential change in the traditional function and aims of the upper secondary as a three - year liberal educational school leading to university after compulsory education. With regard to the entire secondary education reform the position of the upper secondary will alter. The Cabinet decision stands for an overall reform of secondary education and the upper secondary is a part of secondary education. Thus it is important to study how the upper secondary is linked with the 9-year comprehensive school and other secondary education. Additionally we should take into consideration the demands of universities. These facts affect upper secondary school experiment activities.

2. Experiment activities

Teachers participating in experiments are paid for extra work and reports a compensation endorsed by the cabinet in each particular case.

During the school year 1976-77 there are 10 upper secondary school experiments going on, and they concentrate on three priority areas.

The differentiation project deals among other things with problems to do with different learning difficulties and the organization of remedial instruction. To develop teaching methods several experiments in the field of pupil-centered working methods have been carried out.

The task of the evaluation project is to develop a follow-up system for the implementation of curricula and to carry out measures required by the reform of student evaluation.

The project of course-based instruction is at the moment our greatest development project. The aim of the project is to find out through experiments and research the adaptability of course-based instruction in different school forms and levels as well as to develop the structure, teaching arrengements and curricula of the new system. The project plan is closely connected with the Cabinet´s statements of principle on secondary education reform, new development views on curriculum reform, previous course planning and the experiment of non - graded upper secondaries.

3. The experiment of course - based instruction and the non - graded upper secondary

In order to create a uniform school system it is necessary to define those credits and examinations that give a fully free choice of further studies. Liberal educational studies in different types of schools should as far as possible be equated with each other. The attainment of these goals also pre-supposes the unification of organization and teaching arrangements. Syllabuses should be made up of suitable units,

courses, and different syllabuses should be carefully articulated. This would make it possible to unity common contents by defining it in terms of courses. Courses are a means of linking different types of schools in a flexible manner in creating a sufficiently uniform educational system. Course - based instruction also offers an opportunity for regulating course combinations and syllabuses, which help to equalize educational opportunities.

The immediate goal of the course - based instruction project is to clarity:

1. Possibilities for integrating the comprehensive school and the upper secondary school by means of making studies in the upper stage of the comprehensive school course - based.
2. Coordination of the curricula of the upper secondary and vocational schools in terms of general education by means of course - based instruction.
3. Implementation of course - based instruction in adult education (evening schools).
4. Development of course - based instruction in the upper secondary schools.

Course - based instruction is being tried out in six schools. One of them is a state experimental school, Alppilan yhteislyseo, which carries on many kinds of experiments. During the present year this school becomes, however, part of the municipal school system of Helsinki.

Course - based instruction gives several pedagogical benefits, which constitute a substantial improvement on the common so-called distributed or spaced teaching. This system is of course not without problems, which, however, the experiments hopefully help to decrease. One of the most important advantages of the non-graded upper secondary school is the reduction of grade repetition and conditional promotions. The time - table makes it possible for pupils to choose their own subject combinations and order of courses within certain limits.

At the beginning of the experimental activities of Alppilan yhteislyseo in the 1960's several important experiments were

conducted which were concerned with both subject - wise problems and more general problems of teaching arrangements. During the spring term of 1971 preparations for the experimental program of non-graded upper secondary school were carried out. The teaching was changed from the beginning of the school year 1972-73 so that grades were replaced by subject - wise courses. The experiment was to last three years. The first three - year period ended in spring 1975. The second three - year period is under way. From the biginning the experiment has been evaluated by means of a follow-up study.

4. Computerized time-tabling

It is obvious that course - based instruction increases the work load of the headmaster or the person responsible for drawing up the time-table, because several different time-tables have to be prepared during one school year. It is very likely, however, that when course - based instruction is extended it will be possible to use similar principles of activity and basic models in different schools and during different years, which helps to cut time spent on time-tabling. Part of the planning of time-tables is the formation of classes and the drawing up of the actual time-table. The National Board of Education has started an experiment in which time-tables are drawn up by means of computer programs on the basis of the number of lessons per subject. Six schools particupate in this experiment this year and they represent different types of schools.

# EXPERIMENTAL ACTIVITIES OF THE NATIONAL BOARD OF EDUCATION

Yrjö Männistö

The development of curricula needs research and experiment to support it. More than before research has focused on the follow-up of the actual realization of the curriculum. A substantial part of the studies sponsored by the National Board of Education are linked with experiments. Research is incorporated in order to ensure reliability of the results.

## 1. Research contracts

The National Board of Education does not conduct research itself. It has placed its research within universities and research institutes. Such research is called contract research. In order to enlist the best possible scientific experrtise for the development of curricula, the National Board of Education reserves part of its annual budget allocations for pedagogical research and development work and ecucational planning and uses them on research contracts. Studies are carried out in line with criteria defined in the plans of work by the Ministry of Education and the National Board of Education and within the limits of available allocations, and they deal with

1. topics specified by the National Board of Education,
2. priority areas defined by the National Board of Education,
3. topics suggested by universities, research institutes and different interest groups and approved by the National Board of Education.

The planning and supervision of research belong to the pedagogical director general of the National Board of Education. In practise, however, the general planning and coordination of research is handled by the Research and Development Bureau. For topical development tasks there are project groups which coordinate experiments and studies carried out under its supervision.

The Bureau has an overall plan of research and experiment activities, which has been drawn up on the basis of the Board's medium term plan of activities. The plan indicates the priority areas of developmental work. The National Board of Education informs universities and researchers of them. Studies to be financed are selected from among the proposals submitted by university departments. The criterion of selection is mainly that research should be in line with the priority areas indicated in the overall plan.

The proposals of departments and institutes are requested to be sent to the National Board each year by October, November. The National Board deals with the proposals and as far as possible draws on wide expertise in the selection. The project groups set the proposals in their respective domains in order of preference. The Research and Development Bureau is responsible for further treatment of the proposals. After that the collegium of the Board decides on the proposal to be submitted to the Ministry of Education. This usually happens in December, January.

The final decision on the studies to be financed is taken by the Ministry of Education. It can follow the proposals made by the National Board, but it may also deviate from them.

After the decision taken by the Ministry research contracts can be signed. The signatories are the head of the Research and Development Bureau and the pedagogical director general for the National Board of Education, and the representatives of the respective universities, usually the adiministrative director and the rector. After this the National Board transfers the money allocated to the university to a special account either in one or several installments. The university department or research institute appoints a scientific supervisor and hires the principal research worker responsible for the project both of whom are mentioned in the research contract. On the other hand the hiring of other research and auxiliary staff is upp to each department or institute.

2. Supervision of the studies and scientific responsibility

The project groups supervise studies conducted in their domain. Furthermore it is possible to set up expert groups for different projects. The supervision of studies is problematic in so far as such groups may restrict the freedom of research. The more research is directed, the more the freedom of research is reduced. At the same time the objectivity of research may suffer. The National Board of Education has been careful in employing expert groups. They have been used mainly at the planning stage and also at the stage when research results are analyzed and their utilization is discussed.

The officers of the National Board on Education are responsible for the overall planning, coordination and utilization of research results. In the case of individual projects they are responsible particularly for the fact that research plans are formed so that studies serve the development of curricula. Besides their task is to supervise the use of research funds.

Responsibility for the scientific quality of research lies with each department and institute. In practise the responsibility is carried by the scientific supervisors, who are mainly professors or assistant professors.

3. Reporting and publicity of results

The studies are reported either in the report series of the departments/institutes or by the National Board of Education. At present the number of research reports produced within the framework of research commissioned by the National Board is approx. 170.

In addition to reports the National Board offers informational research in its bulletins. The publication of this series was started in 1973. It includes information on e.g. research plans, summaries and articles on research. The series disseminates research information to "key-persons"

such as the officers in the Ministry of Education, the National Board of Education, the National Board of Vocational Education and provincial departments of education, to information officers and journalists, research workers, teacher training colleges and teachers' professional organizations. The organ of the teachers' association, which reaches practically all comprehensive and upper secondary teachers, publishes summaries of studies deemed to be of interest to teacher.

Research information is disseminated abroad by means of the Information Bulletin. It is sent to about 120 adressees abroad, primarily to educational ministeries and central agencies, to research institutes and to educational organizations. The present Bulletin is an example of this publication series.

4. Utilization

In utilization it has been attempted to actively supply information. Dissemination of research information to teachers has been found problematic. It has not been possible to produce sufficiently readable summaries of research results. Summary and abstracting service is not enough, but it should be complemented with interesting articles in which research results are presented and possibilities of their application to teaching is described.

As far as possible it has been attempted to make use of research findings directly in curricular development work. Research information is offered to officers, working parties, advisory committees and committees involved in developing curricula.

5. Resources

The research funds of the National Board of Education were 12.000 FMK in 1965 when contract research started. The sum did not even cover the annual expenses of one research

worker. Only in 1970 was there a substantial increase in research allocations. The year 1974 has been the best research year financially when 1.200.000 FMK was available. Thirtysix studies were financed that year. Average costs per study were then 36.000 FMK.

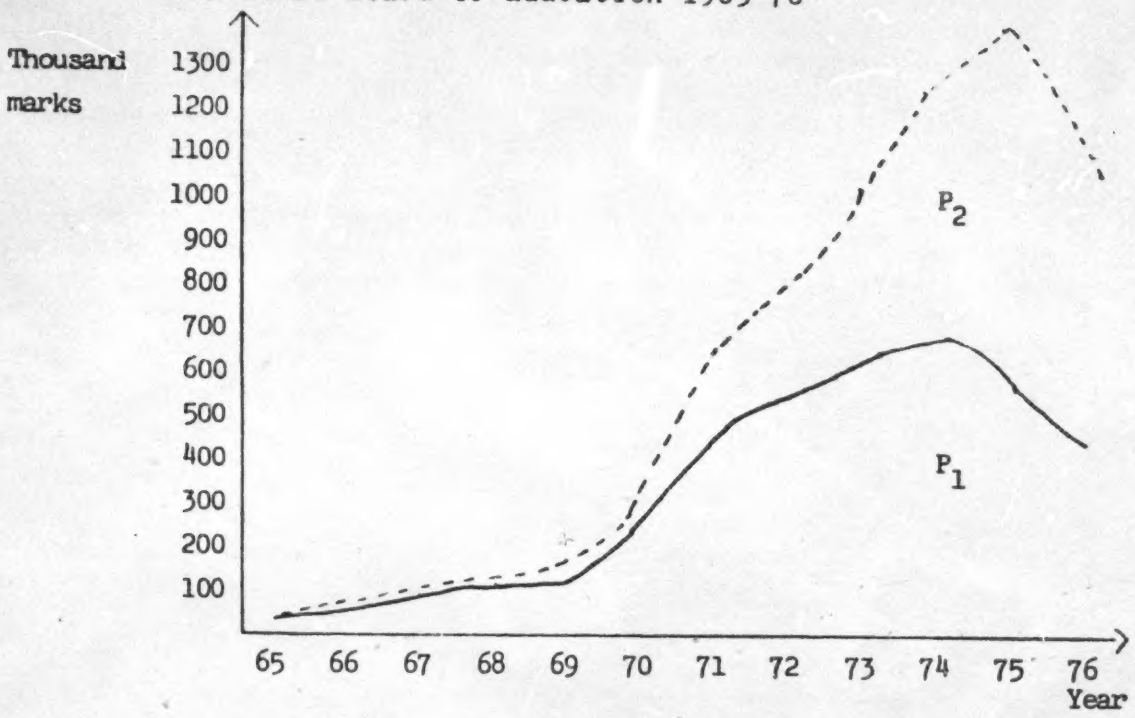
TABLE 1. Research funds available to the National Board of Education in 1965-76, absolute sums and related to the cost of living indes

| Year | Cost of living index 1) | Absolute | Deflat. |
|---|---|---|---|
| 1965 | 100 | 12 000 | 12 000 |
| 1966 | 104 | 20 000 | 19 231 |
| 1967 | 110 | 40 000 | 36 364 |
| 1968 | 119 | 60 000 | 50 420 |
| 1969 | 122 | 70 000 | 57 377 |
| 1970 | 126 | 200 000 | 158 730 |
| 1971 | 133 | 600 000 | 451 128 |
| 1972 | 143 | 750 000 | 524 475 |
| 1973 | 160 | 1 000 000 | 625 000 |
| 1974 | 187 | 1 200 000 | 641 711 |
| 1975 | 220 | 1 300 000 | 590 909 |
| 1976 | 248 | 1 046 114 | 421 820 |

1) Cost of living index 1965 = 100

The table shows that since 1974 the allocations have increased absolutely. If they are related to the cost of living index it can be seen taht there has been a clear cut in available funds. In 1976 the situation was below the level of 1971. Figure 1 illustrates the development of research allocations of the period of time from 1965-76.

FIGURE 1. Development of research funds available to the National Board of Education 1965-76




$P_1$ = Research funds for comprehensive school research, related to cost of living index (1975 = 100)

$P_2$ = Research funds for comprehensive school research, absolute figures

The research funds mentioned above have been available for studies dealing with pre-school and comprehensive education. In addition to them there have been some funds available from 1973 onwards for research on secondary level education. On the average, 2-3 studies have been carried out with these funds anually.

Decision makers need continuously research - based information as a basis for their decision making. For this reason the National Board of Education seeks to spend present resources as effectively as possible and hopes that the present resource situation might improve in the coming years.

One of the worst problems hampering research at present is the fact that it has not been possible to quarantee a long term funding (a period longer than a year). This makes it difficult to plan and carry out research in a proper long-term perspective.